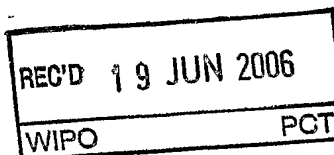


PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



| | | |
|--|--|--|
| Applicant's or agent's file reference 0131 WO | FOR FURTHER ACTION See Form PCT/IPEA/416 | |
| International application No. PCT/FI2005/000114 | International filing date (day/month/year) 24-02-2005 | Priority date (day/month/year) 25-02-2004 |
| International Patent Classification (IPC) or national classification and IPC See Supplemental Box | | |
| Applicant Pancomp Electronics Oy et al | | |

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 7 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

- This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |

| | |
|---|--|
| Date of submission of the demand 23-12-2005 | Date of completion of this report 24-05-2006 |
| Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88 | Authorized officer Peter Hedman/MN Telephone No. +46 8 782 25 00 |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI2005/000114

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Cover sheet

International patent classification (IPC)

H04Q 7/32 (2006.01)

H04B 1/16 (2006.01)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI2005/000114

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:

the international application in the language in which it was filed

a translation of the international application into _____,
which is the language of a translation furnished for the purposes of:

international search (Rules 12.3(a) and 23.1(b))



publication of the international application (Rule 12.4(a))



international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished



the description:

pages 1 - 9 _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____



the claims:

pages _____ as originally filed/furnished

pages* _____ as amended (together with any statement) under Article 19

pages* 11 - 12 received by this Authority on 23 - 12 - 2005

pages* _____ received by this Authority on _____



the drawings:

pages 1 - 4 _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____



a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

the description, pages _____



the claims, Nos. _____



the drawings, sheets/figs _____

the sequence listing (*specify*): _____any table(s) related to the sequence listing (*specify*): _____4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____



the claims, Nos. _____



the drawings, sheets/figs _____

the sequence listing (*specify*): _____any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI2005/000114

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------------|-----|
| Novelty (N) | Claims | <u>1-8</u> | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | | YES |
| | Claims | <u>1-8</u> | NO |
| Industrial applicability (IA) | Claims | <u>1-8</u> | YES |
| | Claims | | NO |

2. Citations and explanations (Rule 70.7)

The invention concerns a method for controlling a portable terminal device to move between a deep sleep state and an active state and solves the problem of remotely controlling functions of the portable terminal device and keeping the power consumption of the device at a minimum level.

Reference is made to the following documents:

D1: US 6018232 A
D3: US 2003104821 A1

D1, which represents the best relevant prior art, describes a portable computing device, including a paging receiver and a radio frequency modem, which may be a cellular telephone modem or a MOBITEK. The device can be ordered to go from a sleep state to an active state when a paging message is received by the device. The message may activate various application programs in order to accomplish a certain task. When the task is completed the device returns to the sleep state. The radio modem may for example be prepared for invoking data transfer sessions upon receiving a message at the paging receiver (see column 2, line 24-column 3, line 46; column 5, lines 24-27; column 7, lines 7-60).

Claim 1 of the claimed invention differs from D1 in that the claim propose that the radio part of the terminal device is controlled to be kept totally passive in order to minimize the current consumption of the portable terminal device. In D1, however, a paging receiver is kept active in order to be able to receive control information.

This difference allows the terminal device of the claimed invention to save more current.

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V(I)

The problem to be solved is therefore to derive a way of saving even more current in a radio part of a mobile terminal device.

It is commonly known to the person skilled in the art that parts of a mobile devices can be shut down to different extends, taking the device to different modes, such as standby mode, sleep mode and deep sleep mode.

From D3 a locating device (2), comprising a mobile communication unit, for remote location of an object (1), and a method for remotely operating the locating device is already known. The radio communication unit can be activated to a standby mode, and deactivated to a sleep mode by the use of SMS messages. The activation/deactivation may be controlled in a periodic manner and activation periods of 5-60 seconds are mentioned (See abstract; paragraph [0024]-[0031]; [0035]-[0036]; [0039]; [0046]; [0060]; [0068]).

Both documents describe methods for reducing the current consumption in a mobile device. Both documents also describe how mobile units may be remotely controlled via paging messages 8(D1) or SMS (D3). It is considered obvious to the person skilled in the art to combine the functionality for providing better current saving abilities, known from D3, with the combined mobile device known from D1 and, thus, to come up with a method as the one suggested in the amended claim 1, especially since no unexpected technical effect is achieved from combining the remotely controllable mobile unit described in D1 with the method for improved current consumption described in D3. Therefore, the invention as set forth in this claim is novel, but fails to involve an inventive step.

Since D3 describes a method which may be time controlled as an option also claim 2 fails to involve an inventive step.

In D3 activation/deactivation may be either time controlled, controlled depending on the acceleration of the device or controlled by a combination of both inputs.

A sensor device (11) is connected to an activation device (12), located within a communication unit (3) which is supposed to go be controlled to move between a sleep mode and an active mode. This controlling function is controlled by messages received from a network subsystem (7) together with input from the sensor device.

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V(II)

Consequently, also what is claimed in claim 3 fails to involve an inventive step.

None of the cited documents do mention that a charging procedure is triggering the setting up of a connection. However, since D3 describe how input from one or more sensors is effecting the transceiver functions of wireless devices, and since charging of these devices, as such, is common practice, no unexpected technical effect is achieved from triggering an activation/ setting up a connection by a physical activation, such as initiating a charging procedure. For this reason claim 4 also fails to involve an inventive step.

Considering what is already known from both D1 and D3, as to controlling of activation/deactivation via messages, such as paging messages/SMS, claim 5 only describe one condition for such a procedure which is one obvious choice available to the person skilled in the art. As a consequence, claim 5, also fails to involve an inventive step.

It is commonly known among persons skilled in the art to use short messages (SMS) for transmission of messages, such as the ones suggested in the claimed invention. This way of forwarding messages is also suggested in D3 (See paragraph [0068]). No unexpected technical effect is achieved from using SMS under the circumstances which have been suggested in the invention claimed in claim 6. Claim 6 therefore fails to involve an inventive step.

Claims 7 and 8 only describe details which are, under the circumstances, obvious to the person skilled in the art, having the knowledge of both D1 and D3. Therefore, these claims also fail to involve an inventive step.

To sum up, the amended claims 1-8 describe an invention which is novel, but fail to involve an inventive step. All claims are industrially applicable.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI2005/000114

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The term "short periods" used in claim 1 is vague and unclear and leaves the reader in doubt as to the meaning of the technical features necessary for providing these periods, thereby rendering the definition of the subject-matter of said claim unclear (Article 6 PCT).

23-12-2005

CLAIMS

1. Method of operation of a portable terminal device (L) in a mobile system in which method the terminal device includes:

5 means and functions (1, 5) for reading data from an object and for storing the data; and

means and functions (1, 6) for making the terminal device to operate as a terminal device of a mobile telecommunication network (24) for sending and receiving data; **characterized** in that, for minimizing the current consumption, the terminal device (Ln) is
10 kept dominantly in a deep rest state (P0), in which the means and functions (1, 6) for making the terminal device to operate as a terminal device of a mobile telecommunication network (24) are totally passive, and said means and functions are activated for short periods (tc1 ... tc5) for sending or receiving data (R, SMS, 28, 28'), and said activation for short periods and operation of the terminal device for sending and receiving data is controlled individually by
15 control data (28, 28') which is sent to the terminal device (Ln) via the mobile communication network (24) during said short periods and saved in the device.

2. Method according to claim 1, **characterized** in that the control data (28, 28') comprises data (B3) for activating the terminal device (Ln) at a certain time (t1) whereby a connection
20 (H, R) may be set up to the terminal device for sending or receiving data.

3. Method according to claim 1, **characterized** in that the control data (28, 28') comprises data (B7) for activating the terminal device (Ln) to set up a connection (H, R) for sending or receiving data in response to an information (G03) included in a data read from an object
25 (Tn).

4. Method according to claim 1, **characterized** in that the control data (28, 28') comprises data (D3) for activating the terminal device (Ln) to set up a connection (H, R) for sending or receiving data in response to starting (LD) the charging of the battery after a certain time (td)
30 from the starting.

5. Method according to claim 1, **characterized** in that the control data (28, 28') comprises data (A1) for denying the activation of the terminal device (Ln) in response to an information (H01) included in a data read from an object (Tn).

35

6. Method according to claim 1, **characterized** in that the control data is sent in a so called short message or similar (SMS) which is stored in the mobile telecommunication network (24) and is receivable by the terminal device when activated and a connection (S) having been set up to the mobile telecommunication network (24).
- 5
7. Method according to claim 1, **characterized** in that, for sending and receiving the data, including the control data, a data transfer connection is set up in the mobile telecommunication network using a suitable protocol.
- 10
8. Method according to claim 1, **characterized** in that the current consumption is minimized in the rest state (P0) so that essentially only an interruption clock (14) of a processor unit (1) of the terminal device (L) is active.